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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,407	06/12/2006	Kazutomo Murakami	Q95419	6272

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EXAMINER	
WANG, JACK K	

ART UNIT	PAPER NUMBER
2612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,407	MURAKAMI ET AL.	
	Examiner	Art Unit	
	JACK WANG	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. In the amendment filed on September 18, 2008, claim 11 is amended and no claim has been cancelled. Therefore, claims 1-11 are pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown, JR. (Pub # US 2004/0017289 A1).

Consider claim 1, Brown, JR. clearly shown and disclose a device for detecting an abnormality (pressure leakage, low inflation conditions, or excessive temperature) of a rotating body (tire) characterized in that the improvement comprises [0010 lines 1-5]: means for measuring various physical quantities (pressure and temperatures) of the rotating body (tire) in rotation [0010 lines 19-22]; means for extracting a signal which is synchronized (plot for multiple inflation pressures) with the rotation of rotating body (tire) by the data measured by the measuring means [0010 lines 8-11]; means for determining a condition (compared against the pressure warning threshold(s)) of the rotating body (tire) from the signal extracted by the extracting means; and abnormality warning means for giving warning of abnormality when the determining means determine that the condition of the rotating body is abnormal (fall below the

warning threshold) [0010 lines 22-26]; wherein the extracting means comprise an adaptive digital filter [0012 lines 3-6] which extracts a signal synchronized with the rotation and picks out a signal having no correlation with the rotation by means of a data measured by the measuring means and a signal synchronized with the rotation extracted by the extracting means, and adapts the adaptive digital filter by means of the signal picked out and having no correlation with the rotation [0010 lines 19-26].

Consider claim 2, Brown, JR. clearly shown and disclose the device for detecting an abnormality of a rotating body, wherein the various physical quantities of the rotating body measured by the measuring means is a signal correlated with vibration, sound, rotating number or rotation [0006 lines 3-9].

Consider claim 11, Brown, JR. clearly shown and disclose a method for detecting an abnormality (pressure leakage, low inflation conditions, or excessive temperature) of a rotating body (tire) comprising: measuring various physical quantities (pressure and temperatures) of the rotating body (tire) in rotation [0010 lines 19-22]; extracting a signal which is synchronized (plot for multiple inflation pressures) with the rotation of rotating body (tire) by the data measured in the measuring step [0010 lines 8-11]; determining a condition (compared against the pressure warning threshold(s)) of the rotating body (tire) from the signal extracted in the extracting step; and giving warning of abnormality when the determining means determine that the condition of the rotating body is abnormal (fall below the warning threshold) [0010 lines 22-26]; wherein the extracting step, an adaptive digital filter [0012 lines 3-6] extracts a signal synchronized with the rotation and picks out a signal having no correlation with the rotation by means of a data measured by the measuring step and a signal synchronized with the rotation extracted by the

extracting step, and the adaptive digital filter by means of the signal picked out and having no correlation with the rotation [0010 lines 19-26].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown, JR. (Pub # US 2004/0017289 A1) as applied to claim 1 above, and further in view of Brusarosco et al. (Pub # US 2007/0010928 A1).

Consider claim 3, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein a delayed data of the data measured by the measuring means is used in extracting a signal synchronized with the rotation in the extracting means.

In the same field of endeavor, Brusarosco et al. teaches the device for detecting an abnormality of a rotating body (tire), wherein a delayed data of the data measured by the measuring means is used in extracting a signal synchronized (performed in real time) with the rotation in the extracting means [0019] for the benefit of improving the data integrity and preventing the false alarm.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a delayed data of the data measured by the measuring means is used in extracting a signal synchronized with the rotation in the extracting means as shown in

Brusarosco et al., in Brown, JR. device for the benefit of improving the data integrity and preventing the false alarm.

Consider claim 4, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein the data delay time corresponds to one rotation time of the rotating body.

In the same field of endeavor, Brusarosco et al. teaches the data delay time corresponds to one rotation time of the rotating body [0008 lines 14-20] for the benefit of improving the data integrity and preventing the false alarm.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include the data delay time corresponds to one rotation time of the rotating body as shown in Brusarosco et al., in Brown, JR. device for the benefit of improving the data integrity and preventing the false alarm.

Consider claim 5, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and an adaptive digital filter.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and an adaptive digital (low-pass) filter [0020] for the benefit of improving data integrity.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a delay circuit to delay the data is provided on a signal line

between an input portion of data from the measuring means and an adaptive digital filter as shown in Brusarosco et al., in Brown, JR. device for the benefit of improving data integrity.

Consider claim 6, Brown, JR. teaches a similar invention except the device for detecting an abnormality of a rotating body, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and a comparator to extract a signal having no correlation with the rotation.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and a comparator to extract a signal having no correlation with the rotation [0006] for the benefit of determining the tire load from tire deflection.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and a comparator to extract a signal having no correlation with the rotation as shown in Brusarosco et al., in Brown, JR. device for the benefit of determining the tire load from tire deflection.

Consider claim 7, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein an order component generated by calculating a rotating cycle from data of rotating information among the data measured by the measuring means is used in extracting a signal synchronized with the rotation in the extracting means.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein an order component generated by calculating a rotating cycle from data of rotating information among the data measured by the measuring means is used in extracting a signal synchronized with the

rotation in the extracting means [0007 lines 6-10] for the benefit of collecting data in various operational condition.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include an order component generated by calculating a rotating cycle from data of rotating information among the data measured by the measuring means is used in extracting a signal synchronized with the rotation in the extracting means as shown in Brusarosco et al., in Brown, JR. device for the benefit of collecting data in various operational condition.

Consider claim 8, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein an order component generation circuit to generate the order component is provided on a signal line between an input portion of rotation information data from the measuring means and an adaptive digital filter.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein an order component generation circuit to generate the order component is provided on a signal line between an input portion (32, Fig. 3) of rotation information data from the measuring means and an adaptive digital (low-pass) filter [0020] (included in the processing unit) (34, Fig. 3) [0079 lines 1-9] for the benefit of reducing the quantity of information sent out of the tire.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include an order component generation circuit to generate the order component is provided on a signal line between an input portion of rotation information data from the measuring means and an adaptive digital filter as shown in Brusarosco et al., in Brown JR. device for the benefit of reducing the quantity of information sent out of the tire.

Consider claim 9, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein the data measured by the measuring means is sampled by a variable sampling in accordance with the data of rotating speed information of the data measured by the measuring means so as to make an apparent cycle constant in extracting a signal synchronized with the rotation in the extracting means.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein the data measured by the measuring means is sampled by a variable sampling in accordance with the data of rotating speed information of the data measured by the measuring means so as to make an apparent cycle constant in extracting a signal synchronized with the rotation in the extracting means [0045-0048] for the benefit of providing data input for determining the tire load.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include the data measured by the measuring means is sampled by a variable sampling in accordance with the data of rotating speed information of the data measured by the measuring means so as to make an apparent cycle constant in extracting a signal synchronized with the rotation in the extracting means as shown in Brusarosco et al., in Brown, JR. device for the benefit of providing data input for determining the tire load.

Consider claim 10, Brown, JR. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein a variable sampling circuit to perform a variable sampling is provided on the input portion of data from the measuring means.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein a variable sampling circuit to perform a variable sampling is provided on the input portion (measuring

device) (32, Fig. 3) of data from the measuring means [0079 lines 7-9] for the benefit of processing signal prior to data calculation.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a variable sampling circuit to perform a variable sampling is provided on the input portion of data from the measuring means as shown in Brusarosco et al., in Brown, JR. device for the benefit of processing signal prior to data calculation.

Response to Arguments

6. Applicant's arguments, see Remarks, filed 9/18/2008, with respect to Claim Objection have been fully considered and amended suggested in prior Office Action. The Objection of Claim 11 has been withdrawn.

7. Applicant's arguments filed 9/18/2008 have been fully considered but they are not persuasive.

Regarding claim 1. Applicant argues that reference cited by Examiner does not extract a signal that is synchronized with rotation of the tire. Rather, Brown senses pressures and temperatures and filters the results over a range of speed and load conditions. There is no disclosure or suggestion in Brown for extracting signals synchronized with rotation of the tire, and also no disclosure or suggestion for excluding signals that have no correlation with the tire rotation.

The examiner respectfully disagrees. Since Brown reference detects the pressure and temperature to determining various physical quantities of the rotating body in motion, and the

signal were constantly update (synchronized) during the operation in motion. When the system detects condition falling below the threshold value with respect to atmospheric pressure and reference temperature, warning is issued [0010]. Therefore, the Brown reference disclosed the limitation claimed by Applicant. However, the Applicant disclosed physical quantities as vibration, sound, rotating speed, or rotation, whereas the reference provide by Brown is monitoring the pressure and temperature. Since claim 1 merely claims "various physical quantities of the rotating body in motion", the physical quantity monitoring of temperature and pressure in Brown meets the limitation claimed by applicant.

Regarding claim 11. The claim has been amended by applicant to coincide with apparatus in claim 1. Therefore, the claim 11 is rejected with same reason stated in claim rejection above.

Regarding claim 2-10. Since these claims are previously present. Therefore, the reason for rejection sustained as prior Office Action.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACK WANG whose telephone number is (571)272-1938. The examiner can normally be reached on M-F 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JKW/

/Daniel Wu/
Supervisory Patent Examiner, Art Unit 2612